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## CITED REFERENCE 2

[Japanese Laid-open Patent Publication No. Hei 4-175265 (Jun. 23, 1992)]

**TITLE: COLORED LIGHT-TRANSMITTING YAG SINTERED COMPACT AND PRODUCTION THEREOF**

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Classification:

- international: C04B35/44

- european:

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### Abstract of JP4175265

**PURPOSE:** To enable production of sintered compact having high light-transmitting property by adding an oxide of europium, dysprosium or holmium as a coloring agent to yttrium, aluminum and garnet which are main ingredients.

**CONSTITUTION:** An oxide of Er, Dy or Ho or inorganic salt capable of providing these oxides or alkoxide by heating is added as a coloring agent to Y<sub>2</sub>O<sub>3</sub> powder and Al<sub>2</sub>O<sub>3</sub> powder having <=99.9% purity and >=5m<sup>2</sup>/g specific surface (BET value) at an amount of 0.05-37.5mol% expressed in terms of each oxide and both components are blended. The blend powder is calcined at 1200-1500 deg.C and subjected to pressure forming at pressure of >=0.5ton/cm<sup>2</sup> and then sintered at 1600-1850 deg.C. The sintered compact is subjected to mirror polishing to provide colored YAG sintered compact having light transmitting property and being >=10% in linear transmittance in 0.8μm wavelength using a sample having 1mm thickness. The sintered compact is reduced in scattering in crystalline grain boundaries, because it uses cubic YAG as a matrix and free from grain boundary with coloring agent, because the coloring agent is subjected to solid solution in the matrix and has garnet structure consisting of single phase.

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